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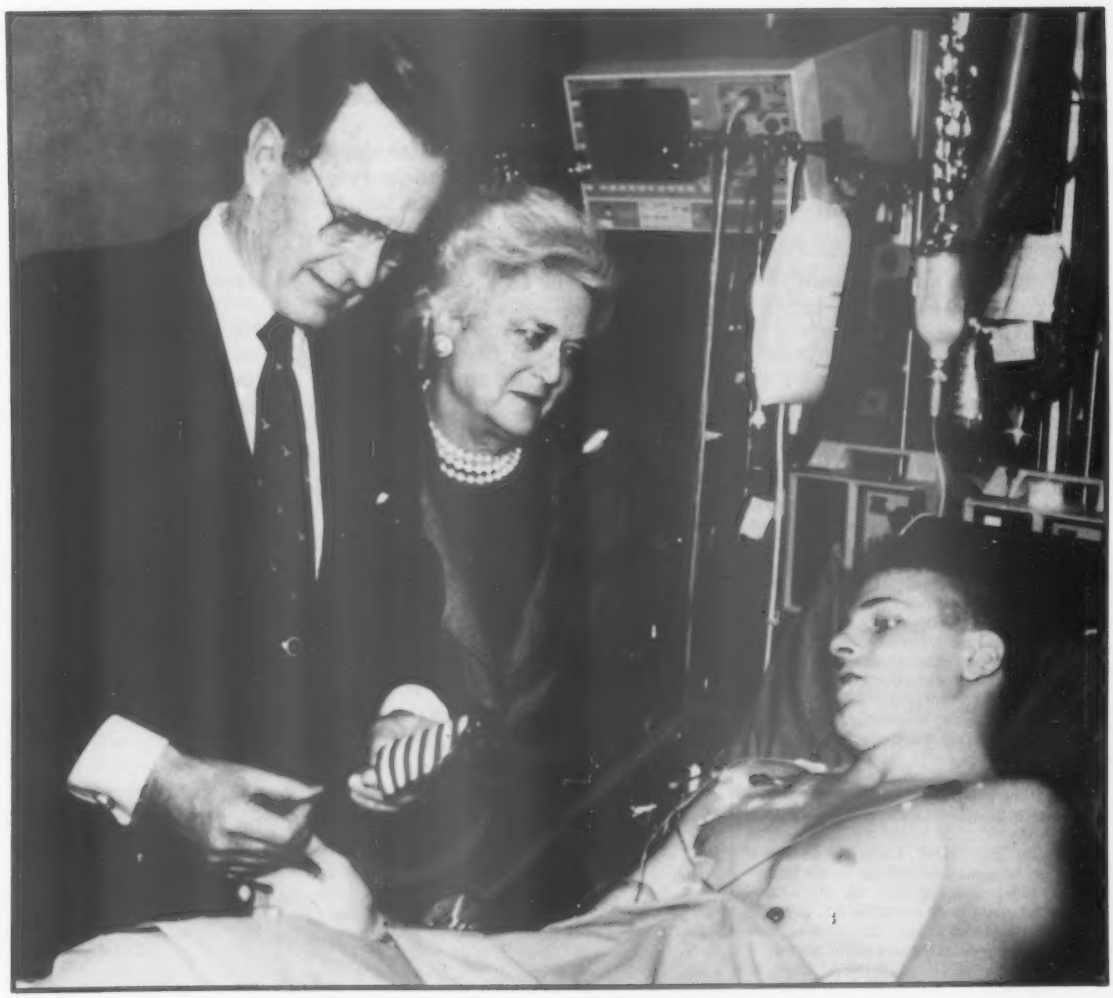

Operation Just Cause — Were we ready? (page 10)

Biomedical Sciences Corps celebrates 25 years of service (page 4)

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AFRP 160-1

Message from the Surgeon General 3

The Biomedical Sciences Corps — A Potpourri of Health Professionals 4
Col. D. Dean Falconer, BSC

Operation Just Cause
Air Force Medics Answer the Call 10

Total Quality Management: Improving Patient Relations Programs 14
Capt. James P. Morgan, MSC
Maj. Donald W. Shields, MSC

The First Central Medical Establishment 18
George M. Watson Jr., Ph.D.

Brigadier General Selections 22

In Memoriam: Maj. Gen. (Dr.) Dan C. Ogle 23

Front cover: President George Bush and Barbara Bush visit with Army Specialist William Dunham at Wilford Hall USAF Medical Center, Lackland AFB, Texas, where Specialist Dunham was treated following injuries in Operation Just Cause. Also, we are introducing our new logo with this issue. The logo was designed by SSgt. Raymond Langford.

Message from the Surgeon General

During March, several subcommittees of the House and Senate conducted open hearings on military medical service matters. In addition to the surgeons general of the Army, Navy and Air Force, witnesses included the assistant secretary of defense (health affairs), service directors of personnel, chiefs of the nurse corps, and medical center commanders from each branch. Throughout the hearing process, several themes emerged. Some of my initial impressions are outlined below.

It is very clear that the Congress intends to reduce the Department of Defense budget, and that some of the cuts will involve personnel reductions. However, there is an awareness that top-quality, responsive health care is essential, even as the overall size of the Air Force is reduced.

There is great congressional frustration with the size of the CHAMPUS budget and keen understanding that we can provide more cost-effective, high-quality health services in the direct care system. With Air Force CHAMPUS expenditures now close to $1 billion annually, I look for added oversight of Air Force managed health care programs including our Catchment Area Management (CAM), DOD/VA Sharing, Partnership, Health Care Finder, Management Efficiencies, and Alternate Use of CHAMPUS Funds initiatives. In addition to controlling costs, I believe we'll be asked to do a better job of projecting our CHAMPUS workloads and requirements.

Finally, I sense genuine appreciation and concern for our health care professionals. Each of the committees looked at recruitment, retention, and utilization of Air Force physicians, nurses, dentists, allied scientists and support personnel. There is great interest in the effect of physician pay initiatives, bonuses and special pays for nurses, and additional support personnel for our providers. I'm not yet sure of the ultimate outcomes, but I look for further scrutiny of the various "people programs" that affect the Air Force Medical Service.

Against this backdrop, it's clear that we face major challenges ahead. The coming years will bring added pressure to control costs as we support a reduced active duty force. Nevertheless, I'm committed to the proposition that the medical support we provide will never be less than first rate. With your continued support, I'm confident we'll be successful.

Monte B. Miller

MONTE B. MILLER
Lieutenant General, USAF, MC
Surgeon General

The Biomedical Sciences Corps—A Potpourri of Health Professionals

Col. D. Dean Falconer, BSC

On March 15, 1990, the USAF Biomedical Sciences Corps celebrated a quarter century of existence. With more than 2,500 men and women assigned, the Corps is characterized by diversity and professionalism. From the optometrist's office to the health physicist's laboratory, biomedical scientists provide a potpourri of health services in support of the Air Force family. This interdisciplinary effort is unique within the Medical Service and provides the Corps its strength as a "melting pot" of health care professionals.

Excerpts from History

Today's Corps can trace its roots all the way to World War I when, on May 18, 1917, Congress established the Army Sanitary Corps to combat infectious diseases. The Sanitary Corps, which included 3,000 officers with scientific and health-related specialties, was almost totally demobilized shortly after the war. However, on June 4, 1920, a Medical Administrative Corps (MAC) was established that included all ancillary and scientific medical specialties. Pharmacists were added to the MAC in 1936, and their role steadily grew as the MAC expanded over the years.

During World War II and shortly thereafter, a number of administrative actions exerted tremendous long-lasting influence on biomedical scientists. The remnants of the Sanitary Corps was resurrected, while a Dietetics Corps and a Pharmacy Corps was established. In 1945, the Women's Medical Specialist Corps (WMSpC) was created to consolidate the management of occupational therapists and physical therapists. Dietitians were integrated into the WMSpC shortly thereafter.

With the creation of the Army Medical Service Corps on August 4, 1947, commissioned officers from a variety of health disciplines were consolidated. Biomedical scientists from the WMSpC, MAC, Pharmacy Corps, and the revived Sanitary Corps were included in the consolidation.

Although the Air Force achieved its independence from the Army with the passage of the National Security Act in 1947, it took the new branch an additional two years to obtain its own medical service. When established on July 1, 1949, the USAF Medical Service was composed of six specific groups: Medical Corps, Dental Corps, Nurse Corps, Veterinary Corps, Medical Service Corps, and Women's Medical Specialist Corps. The Medical Service Corps included administrators, optometrists, pharmacists, biomedical laboratory officers, sanitary and industrial hygiene engineers, medical entomologists, aerospace physiologists, health physicists, social workers, and psychologists.

Over time, demand for Air Force health care grew, and the requirements of the Medical Service became more complex. Based on a concept developed by Col. Alvin F. Meyer Jr., a bioenviromental engineer, various studies confirmed the need to better manage the scientific component of the Medical Service Corps. In December 1964, Secretary of the Air Force Eugene M. Zuckert sanctioned the establishment of a separate Biomedical Sciences Corps. Orders were published on Jan. 28, 1965, and on March 15, 1965, the new corps became a reality.

Recognizing Colonel Meyer's efforts, Lt. Gen. Richard L. Bohannon, Air Force surgeon general, appointed him as the first chief of the Biomedical Sciences Corps. The original 809-member cadre of BSCs included bioenvironmental engineers, medical entomologists, laboratory officers, podiatrists, audiologists, speech pathologists, aerospace physiologists, health physicists, social workers, pharmacists,

optometrists, occupational therapists, dietitians, and physical therapists. Later in the year, psychologists were added. During the next 25 years, physician assistants, veterinarians and environmental health officers joined the ranks.

Today's Biomedical Sciences Corps

Today, more than 2,500 biomedical scientists serve in a wide range of jobs at all levels of the Air Force. While the vast majority practice their chosen specialties in hospitals and clinics, many of these multi-talented officers have grown into key positions in readiness, quality assurance, training, intelligence, health promotion, medical information systems, research and development, and other staff positions. Several BSCs serve as commanders of Air Force organizations including three medical treatment facilities. To quote Col. Phillip E. Smead, Corps chief from 1984 to 1988, "Biomedical Sciences Corps officers are many in talent and capabilities, but are one in their determination to be full partners in and enthusiastic contributors to the Air Force Medical Service mission."

Nearly two-thirds of today's BSCs are dynamic, young lieutenants and captains who bring great vitality to the Medical Service. Among the most highly educated Air Force groups, more than 35 percent have master's degrees and nearly 25 percent have professional and/or doctoral degrees. With much of its heritage traced to the Women's Medical Specialist Corps of the 1940s, it's small wonder that the Biomedical Sciences Corps has a high percentage of females. Indeed, females account for 22 percent of today's Corps—as compared with 12 percent of the Air Force as a whole.

A Diversity of Roles

Today's Biomedical Sciences Corps is composed of 18 distinct disciplines. Career management activities divide the Corps into "environmental" and "clinical" components. Bioenvironmental engineers, medical entomologists, health physicists, aerospace physiologists, environmental health officers, and veterinarians make up the "environmental" specialties. The "clinical" disciplines include biomedical laboratory officers, pharmacists, optometrists, dietitians, physical therapists, occupational therapists, clinical psychologists, clinical social workers, podiatrists, physician assistants, speech pathologists, and audiologists. Talk about diversity! And yet, despite the wide range of interests and specialization, all share the common bond of dedication to the Medical Service mission.

Environmental Specialties

As managers of Air Force physiological training and hyperbaric therapy units, the 79 Air Force **aerospace physiologists** stand out as a magnificent group of highly skilled professionals. They've pioneered new forms of hyperbaric oxygen therapy, saving countless lives in the process. And despite missions that routinely take Air Force pilots to the edge of space, aerospace physiologists have helped raise high performance flight safety to an all-time high.

With 374 members, **bioenvironmental engineers** (BEEs) make up nearly 15 percent of today's Corps. Responsible for the health aspects of the USAF Occupational Safety and Health Program, the base BEE is a key advisor to wing, base and hospital commanders alike. From routine work area oversight, to the new challenges of asbestos removal, radon detection, and rocket propellant handling, bioenvironmental engineers touch the lives of virtually everyone assigned to or living on a U.S. Air Force base.

Environmental health officers (EHOs) represent the newest major discipline of the BSC. With the disestablishment of the Veterinary Corps in 1980, responsibility for all animal-related activity was transferred to the Army. Except for a small cadre of research scientists, those veterinarians who elected to remain with the Air Force transitioned to the new and dynamic specialty of environmental health. In 1988, environmental health nurses were transferred from the Nurse Corps to the BSC and became environmental health officers. Today's 177 EHOs are responsible for more than 50,000 sanitary inspections of USAF food service facilities annually. They administer the training of more than 850,000 Air Force workers on health hazards in the workplace and manage the AIDS testing of the entire Air Force active duty population.

Fourteen **veterinary scientists** remain a part of the Corps. Over the years, veterinarians have participated in a great deal of research related to early suborbital and orbital space flights. They were at the forefront of the design and operation of the lunar receiving laboratory and the lunar quarantine program. Today's veterinarians are actively involved in supporting the Strategic Defense Initiative (SDI), as well as human factors research.

With its arsenal of nuclear weapons and increasingly complex use of diagnostic and therapeutic radiation methods, the Air Force requires specialists to design, implement and monitor radiation systems and exposure among workers. During the past 10 years, the 30 BSC **health physicists** have overseen a steady drop in radiation exposure among Air Force people. In fact, it's been estimated that, despite new and exotic technology, radiation exposure among Air Force workers is approximately 1/500th of allowable levels. Fortunately, the Air Force has had very few nuclear weapons accidents. When they've occurred, however, health physicists have been instrumental in protecting response forces as well as the public.

Imagine working in a field environment in which you were exposed to approximately 40 mosquito bites per minute! Now consider the same environment with one exception. This time, you were able to use a newly developed repellant which had been developed by U.S. Department of Agriculture and Air Force **entomologists**. The result—only one bite per hour! That's just one of the activities which involve the 14-member cadre of USAF entomologists.

Shortly after Hurricane Hugo slammed into the South Carolina coastline, these dedicated professionals participated in the airborne spraying of more than 800,000 acres to kill mosquitoes that distracted and threatened to spread disease among those involved in the rebuilding. Other activities include tick surveillance, identification, and monitoring in an effort to control Lyme disease; control and containment of Japanese beetles in the Azores; and dengue fever surveillance to combat this disease that once again poses a threat to the United States.

Clinical Specialties

Today's rapid advances in medicine are paralleled in the work of 135 **physical therapists.** Projected to be one of the fastest growing American health professions over the next 10 years, physical therapists are expected to assume expanded roles in orthopedics and sports physical therapy, cardiopulmonary medicine, neurology, pediatrics, geriatrics, and electrophysiology. Air Force physical therapists reflect the dynamic nature of the profession, and are at the forefront of fitness, injury prevention and rehabilitation.

Though small in number (28 on active duty), Air Force **podiatrists** perform magnificently as the physicians and surgeons of the human foot. During wartime, podiatrists are assigned as surgical assistants for orthopedic and general surgery in third- and fourth-echelon treatment facilities. In peacetime, these Air Force specialists perform surgical repair of foot deformities such as bunions, hammertoes, and heelspurs. Those with advanced surgical training repair traumatic injuries and more severe injuries of the feet. The practice of Air Force podiatrists ranges from newborns to geriatric patients.

At the inception of the Biomedical Sciences

CHIEFS OF THE BIOMEDICAL SCIENCES CORPS 1965-Present

1965-69	Col Alvin F. Meyer, Jr	Bioenvironmental Engineer
1969-70	Col Frances Ballantine	Dietitian
1970-72	Col Floyd M. Morris	Optometrist
1972-78	Col Thomas L. Cocheres	Psychologist
1978-81	Col Herbert E. Bell	Bioenvironmental Engineer
1981-84	Col Nicholas C. Nicholas	Aerospace Physiologist
1984-88	Col Phillip E. Smead	Bioenvironmental Engineer
1988-	Col D. Dean Falconer	Dietitian

Corps in 1965, most of the 30 Air Force **psychologists** were trained at the master's degree level; their role was primarily to evaluate the suitability of airmen for continued service. What a difference 25 years makes! Psychologists entering the Air Force today must have a doctoral degree, and their practice spans the entire beneficiary spectrum—active duty members, dependents, and retirees of all ages. Assigned to such diverse arenas as behavioral health, survival schools, medical intelligence, psychological operations, aviation and the OSI, the 190 BSC clinical psychologists have shown their exceptional value as members of the Air Force health care team.

Gone forever are the hospital "mess halls" of 25 years ago. In their place are modern dining facilities which annually deliver more than 7 million meals to hospital patients, visitors and staff members throughout the world. In addition, today's **dietitians** provide almost 114,000 outpatient diet consultations each year. That's a major responsibility for only 86 Air Force officers. In the 25 years of the Corp's existence, new preparation techniques, better recipes, and lots of hard work by these dedicated professionals have greatly improved the nutrition, appearance and taste of the food served in our medical facilities.

With only four officers assigned, **speech pathologists** represent the smallest discipline within the Corps. They're assigned to ENT (Ear, Nose and Throat) clinics and treat a wide range of patients with dysphagia, neurological impairment because of injury or disease, or following surgery to the head, neck, tongue, jaw and larynx. As part of the Exceptional Family Member Program, they evaluate and treat children and provide family counseling. Although small in number, the contribution of speech pathologists is large indeed.

Closely aligned with speech pathologists are 32 dedicated **audiologists** whose contribution to the rehabilitation of hearing-impaired patients has been tremendous. Audiologists perform a wide range of hearing tests and, where indicated, refer their patients for surgical treatment by specially trained physicians. Since the Corps was founded 25 years ago, great technological strides have been made in all disciplines, and audiology is no exception. For example, it's now possible to detect hearing loss in newborn babies. Treatment to help these tiny patients use their residual hearing can begin as early as one month of age. As a result, such children can grow up to function normally in a hearing world.

Responding to special-needs families is the primary mission of the more than 200 **clinical social workers** who are an integral part of the Biomedical Sciences Corps family. Social workers provide evaluation, treatment, and referral services in such areas as stress management, alcohol treatment, drug dependency, and a host of other human conditions.

Because of their involvement with the Family Advocacy program, Exceptional Family Member Program and the 12 Air Force Alcoholism Rehabilitation Centers, social workers do a tremendous job of assisting Air Force members and families throughout the world. The net result is invariably a return of the Air Force member to the job of supporting the mission.

In no sphere of medical activity has there been more substantial growth since 1965 than in Air Force pharmacies. Today's **pharmacists** oversee the provision of approximately 35 million outpatient prescriptions annually. To keep up with the increasing demand, pharmacists have skillfully applied the lessons of industrial engineering, queuing theory and operations research. The result is a significant change

Origin of the Biomedical Sciences Corps Badge

When the Biomedical Sciences Corps was officially established, there was no authorization for a distinctive badge like that worn by other Medical Service officers. The embellishment of some distinctive symbolism on the caduceus was debated. However, no single device appeared to be appropriate for the broad gamut of skills within the Corps. Based on the precedent set by the Dental and Veterinary Corps, it was considered preferable to have a letter designation.

After careful consideration, the idea of using an "S" was adopted. This device was used before and throughout World War II by the U.S. Army Sanitary Corps, the forebear of the present-day Corps. Today the "S" is recognized by many to mean "sciences."

in the way in which prescriptions are delivered. Satellite pharmacy locations in base exchanges, housing areas and other locations outside the base medical facility yield more timely and accessible service.

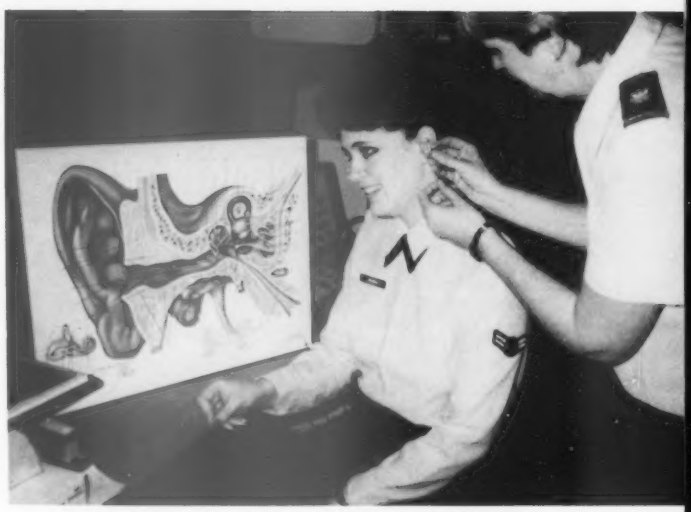
At the same time, the explosion in the number of available medications makes it imperative that the hazards of drug interaction be known and communicated to health care providers. As drug therapy becomes more sophisticated and costly, ideal product selection and usage take on tremendously added significance. In the center of all this activity are the more than 200 dedicated members of the Air Force pharmacy community. They do a great job for the Medical Service and for the Air Force family as a whole.

Complexity and precision are the watchwords for the more than 200 **clinical laboratory officers** assigned throughout the Air Force. Their responsibilities almost defy comprehension: more than 60 million procedures each year; more than 5.5 million specimens annually; and oversight of 2,100 technologists and technicians who devote more than 2.5 million man-hours to their jobs. Each specimen, every test, and all procedures require pinpoint accuracy and timeliness to assist in the diagnosis and treatment of an increasingly complex array of medical conditions. In many ways, clinical laboratory officers are the "unsung heroes" of the Medical Service.

Change has been a constant during the 25-year history of the BSC, and for no one more so than the nearly 200 **optometrists** who serve through the world. Just one example—the introduction of the soft contact lens—drives the point home. Through joint efforts with flight surgeons, BSC optometrists now prescribe the soft lenses to Air Force aviators to enhance combat capability. This is the kind of state-of-the-art, mission-oriented primary eye care provided by Air Force eye clinics everywhere.

During the early 1970s, the Medical Service pioneered the training and use of **physician assistants** in response to a nationwide shortage of physicians. In short order, PAs were found to deliver cost-effective health care of high quality to Air Force patients everywhere. Not only did physician assistants "bridge the gap" created by the physician shortfall, they became a vital component of the Medical Service team.

The first physician assistants completed their training in 1971, but were limited to enlisted status. However, in 1978, their professional capabilities were formally recognized by commissioning more than 300 of them as full-fledged members of the Biomedical Sciences Corps. At the same time, many remained as enlisted members. But by late 1982, all were required



to complete the requirements for commissioned status. Today, more than 400 commissioned physician assistants provide health care services to nearly 2 million patients annually.

The Future

As the new decade begins, men and women of the Biomedical Sciences Corps can be proud of their accomplishments over the past 25 years and optimistic for the future. The notion of 18 separate disciplines blended into a single, unified team of allied health professionals places the Corps at the forefront of Air Force health care delivery.

Though others were skeptical, Col. Alvin T. Meyer, first chief of the BSC, recognized his corps' "tremendous potential for contribution to the Medical Service mission." In 25 years, that potential has been realized many times over. The Corps has made invaluable contributions to research, clinical medical practice and the aerospace medical mission. Repeatedly, BSCs have exceeded expectations and helped to open new frontiers in the delivery of Air Force health care services.

This proud heritage is merely the beginning—the foundation for the sophisticated, thriving Biomedical Sciences Corps of the future. But past, present or future, the BSC mission remains unchanged: taking good care of Air Force people.

Col. D. Dean Falconer is the chief, Biomedical Sciences Corps, Office of the Surgeon General, Bolling AFB, DC

Maj. Laurel M. Anderson secures a bandage on Navy Petty Officer Carlos Moleda.

Operation Just Cause

Air Force Medics Answer the Call

In December 1989, as Americans around the world were preparing for the holidays, elements of the U.S. armed forces were preparing for another kind of event. It began on Dec. 20. By order of President George Bush, the military launched an attack against the Central American country of Panama to depose dictator General Manuel Noriega and restore a more democratic form of government. Success of the operation, known as "Just Cause," depended in part upon direct Air Force and Army medical support. But just how ready were the medical elements?

Planning at Howard AFB, Panama

Medical planning in Panama to support Just Cause was coordinated by participating units before the operation. In addition to special operations forces medical planners, other elements were also responsible for conceptualizing the medical aspects for the operation. These included representatives of the U.S. Southern Command (USSOUTHCOM) Surgeon's Office and Gorgas Army Community Hospital, Quarry Heights, Panama; the 18th Airborne Corps Surgeon's Office and the 44th Medical Brigade, Fort Bragg, N.C.; the 1st Aeromedical Evacuation Squadron, Pope AFB, N.C.; and the 24th Medical Group, Howard AFB, Panama.

According to design, the 24th Medical Group served as both the host medical treatment activity and as a forward deployed medical treatment facility for the operation. The 24th was tasked to:

- Provide personnel support to the unified command and Joint Task Force-South.
- Serve as the primary personnel source for a Joint Casualty Collection Point (JCCP).
- Provide trained aeromedical evacuation crewmembers to assist temporarily assigned personnel.
- Provide ground ambulances for casualties on the west bank of the Panama Canal.
- Coordinate with Howard AFB support agencies.
- Furnish supplemental medical material support as required.
- Render advice in establishing preventive health and environmental measures.

The focal point for medical support of combat operations was the JCCP, located at the north end of the Alpha taxiway at Howard AFB. Casualties were

delivered to a single landing zone where staff could implement rapid triage, treatment and stabilization procedures. The JCCP consisted of two Forward Surgical Teams (FST) operated by the Army's 5th Mobile Army Surgical Hospital. The FSTs were supplemented by flight surgeons from airlift units; nurses and technicians from air evacuation components; and 56 medical, nursing, and support personnel from the 24th Medical Group.

Planning at Wilford Hall

At Wilford Hall USAF Medical Center, Lackland AFB, in San Antonio, Texas, the commander, Maj. Gen. (Dr.) Vernon Chong, was notified of Operation Just Cause late on the evening of Dec. 19. He was told that Wilford Hall would be the primary treatment facility for casualties, with Brooke Army Medical Center—also in San Antonio—as the backup. Since the first wounded were expected to arrive early the following morning, medical officials decided to cancel all elective surgery, suspend TDY and leave, and recall all surgical personnel. In addition, the Wilford Hall Medical Center and Brooke Army Medical Center Level 1 trauma centers were closed, leaving only one civilian trauma center to support the San Antonio Emergency Medical System.

Four ambuses, supplies and personnel were sent to nearby Kelly AFB, using the same hangar that had been used during previous training exercises. There, the 4th Aeromedical Staging Facility, Wilford Hall staff, and the Air Force Reserve's 32nd Aeromedical Evacuation Group set up a reception area of 100 beds. Transportation between Wilford Hall and Kelly AFB included two helicopters from Fort Sam Houston, six ambuses, and several modular ambulances.

Planning at Military Airlift Command

In the meantime, preparations were being made at Military Airlift Command (MAC) headquarters for the air evacuation of patients from Panama to points in the United States, including Wilford Hall. The MAC theater and stateside aeromedical evacuation system included five elements—one aeromedical evacuation control center, one augmented mobile aeromedical staging facility, two aeromedical evacuation liaison teams and 12 medical flight crews located at Howard AFB.

MAC sent 110 aeromedical evacuation personnel directly to Panama, while the 1st Aeromedical Evacuation Squadron, Pope AFB, N.C., assumed responsibility for all aeromedical evacuation requirements within the theater of operations. Other units providing crews were the 31st Aeromedical Evacuation Squadron, Charleston AFB, S.C., and the 32nd Aeromedical Evacuation Group and 34th Aeromedical Evacuation Flight, Kelly AFB, Texas.

The Battle Begins

In Panama, casualties began arriving at the Joint Casualty Collection Point within 15 minutes of the first shots being fired. The wounded arrived via UH-1, UH-60, OH-6, HH-53, CH-47, C-130, bus, van, truck and ambulance. Of the 275 casualties seen at the JCCP, 257 were eventually transferred by MAC aeromedical evacuation to the United States.

As the injured reached the JCCP, they were immediately triaged on the tarmac. Patients were directed to the resuscitation tent, the FST surgical area, the morgue, or the Mobile Aeromedical Staging Facility, which was used as a holding area. The FST tent contained two Advanced Trauma Life Support (ATLS) stations and two operating room tables for immediate reception. The resuscitation tent had eight ATLS stations, each manned by a physician and two assistants.

Upon arrival, the wounded were disrobed, IV's were started, and patients were totally examined for wounds, discolorations and abnormalities. Limbs were splinted, dressings applied and IV narcotics and antibiotic therapy initiated. The more critically injured casualties underwent immediate surgery. The FST possessed the expertise to handle all types of surgical procedures and performed over 27 major cases.

Post-operative casualties requiring close observation or ventilator support remained in the FST "recovery room." A total of 151 casualties were treated and evacuated during the first 24 hours. Types of wounds encountered included fractures of all extremities, shrapnel, gunshot, trauma, various lacerations, chemical burns and heat-related injuries. Stateside medical facilities later credited the exceptional survival and recovery rate of Just Cause casualties to the superb triage, treatment and stabilization of the JCCP.

After the first 20 hours, 24th Medical Group personnel returned to the clinic to resume 24-hour nursing and medical coverage of the west bank population. In addition to providing emergency response coverage and urgent care services, 24th Medical Group personnel were tasked to provide immediate response to the JCCP, personnel on call for standby deployment of an air transportable clinic, bilingual technicians to support a refugee center, and a two-man medical technician detail to an Army patrol boat unit.

In addition, the Environmental Health Service (EHS) managed the on-base morgue facility and provided technical assistance regarding serious health-related issues. The EHS and Bioenvironmental Engineering Services disposed of body fluids at the JCCP and assessed the drinking water and other public

Capt. (Dr.) Barry Gardner of Wilford Hall Medical Center inserts a drainage tube into the lung of a soldier wounded in the Panama invasion.

Airman 1st Class Rodolfo J. Palacios, medical technician at Wilford Hall Medical Center, treats Army Sgt. David Reeves.

President and Mrs. Bush visit with Navy Petty Officer Scott Norton.

health matters at the crowded billeting sites.

Medical Evacuation

Eleven hours after arriving in Panama, the 1st Aeromedical Evacuation Squadron became operational. During the first 27 hours, 192 of 258 Just Cause patients were evacuated. The C-141 was the most commonly used aircraft. MAC flew a sum of nine missions from Panama to the States. In addition, 28 C-9 and three C-21 redistribution missions were flown within the United States to place patients near their home of record.

The first plane arrived at Wilford Hall at 11:30 a.m. on Dec. 20, with the last flight arriving at 1 p.m. on Jan. 8, 1990. Injuries treated included 158 (62 percent) gunshot or shrapnel wounds, 70 (28 percent) parachute-jump-related, and 25 (10 percent) other injuries or conditions. Of the 258 total, 112 were treated at Brooke Army Medical Center and 146 at Wilford Hall.

In addition to the commendable efforts of the medical staff, there was an abundance of support from the San Antonio community. Food, gifts and other services were provided by the San Antonio citizens. Humanitarian support ranged from direct financial assistance to a visit by the Dallas Cowboys Cheerleaders.

Assessment of Medical Support

In evaluating the condition of the wounded arriving at Wilford Hall from Panama, Col. (Dr.) William L. Burner III, chief of surgery, stated that the

Medical Technician Airman 1st Class Michelle Kamenski examines Army Sgt. Thomas Hicks.

Maj. Laurel M. Anderson, clinical nurse at Wilford Hall Medical Center, gives a shave to Army Sgt. Kyle Kelly.

advanced trauma life support guidelines had been followed to the letter in every patient. "I did not find any injuries that had not been previously recognized and treated in Panama." The Army counterpart at Brooke Army Medical Center, Col. (Dr.) Johnny D. Alvarez, concurred, and added that "All I can say is that things were done well. Under the circumstances I think they did an excellent job."

Wilford Hall commander, General Chong, maintained that the Army and the Air Force worked well together throughout the operation. General Chong added that prior readiness training and disaster exercises really paid off. Maj. Nancy Grella, chief nurse for the 24th Medical Group, perhaps best expressed the situation: "Despite all the readiness training that we do, it is impossible to visualize something of this magnitude, until you see it for real."

Finally, Lt. Gen. (Dr.) Monte B. Miller, the Air Force surgeon general, noted that the entire operation had gone smoothly. "It was evident," he said, "that our efforts in medical readiness training—and I mean in all three services—paid off again. Our performance in Just Cause proved to us that the effort and time invested in training, even the time it takes away from patient care sometimes, is worth it."

Compiled by George M. Watson Jr., Ph.D., chief historian for the Office of the Surgeon General, with contributions from Maj. Gen. (Dr.) Vernon Chong, commander, Wilford Hall USAF Medical Center; Col. A. Felix Meyer III and Maj. Nancy L. Grella, 24th Medical Group, Howard AFB, Panama; and Lt. Col. Darrell E. Eickhoff, director, Readiness and Aeromedical Evacuation, Office of the Command Surgeon, Headquarters, Military Airlift Command.

Capt. Kevin F. Riley from the 1st Aeromedical Evacuation Squadron, Pope AFB, N.C., gets a welcome-home kiss from daughter Stephanie as he returned from Panama on Jan. 6.

Total Quality Management: Improving Patient Relations Programs

Capt. James P. Morgan, MSC
Maj. Donald W. Shields, MSC

Total Quality Management (TQM) is a revolutionary concept that has received much attention the past few years. It is a concept based upon the idea of getting everyone to do things right the first time (1). Though this concept sounds simple and logical, it is a far cry from the way we do business in the world of military medicine.

In our world, we rely on comprehensive inspection programs, Quality Assurance offices, and patient relations personnel to minimize the effect of "broken" systems and products. Too often we stop our corrective efforts once the immediate crisis has been solved. With TQM, the identification of a problem is only the first step. The next steps are the ones that really count—finding the root causes of the problem and then refining the system to eliminate those causes. At Wright-Patterson USAF Medical Center, we have begun the long, difficult journey toward a total quality culture.

Major Principles of Total Quality Management

Before discussing how we used TQM to improve the patient relations program at the medical center, it may be helpful to discuss some of TQM's major principles. Air Force Logistics Command (AFLC) has identified four that are particularly applicable to military medicine. These principles include customer satisfaction, management commitment, continuous

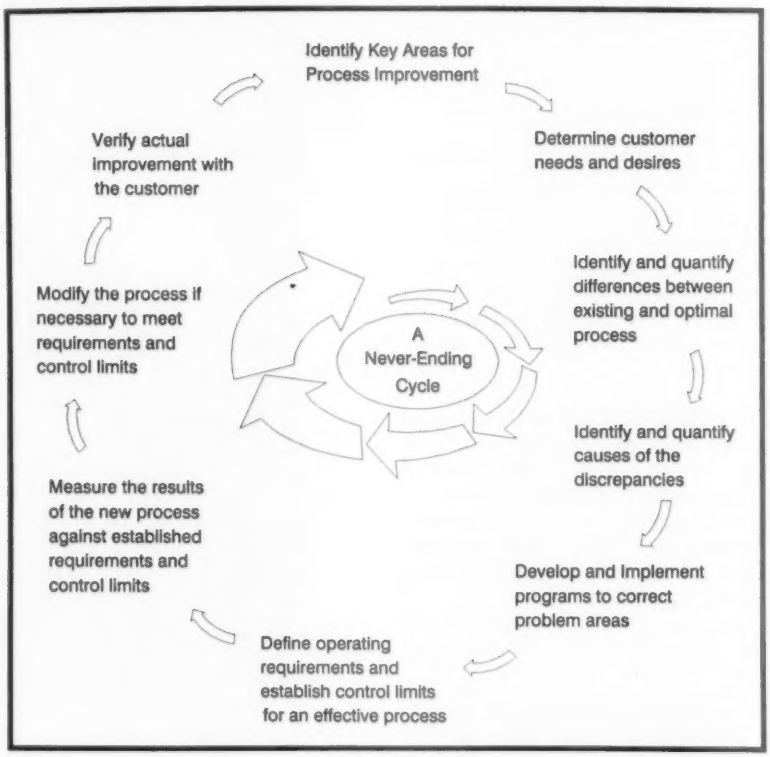

Identify Key Areas for Process Improvement
Determine customer needs and desires
Identify and quantify differences between existing and optimal process
Identify and quantify causes of the discrepancies
Develop and Implement programs to correct problem areas
Define operating requirements and establish control limits for an effective process
Measure the results of the new process against established requirements and control limits
Modify the process if necessary to meet requirements and control limits
Verify actual improvement with the customer
A Never-Ending Cycle

Figure 1. The continuous process improvement cycle. Illustration is adapted from guidance provided in the Materiel Management Process Action Team Handbook.

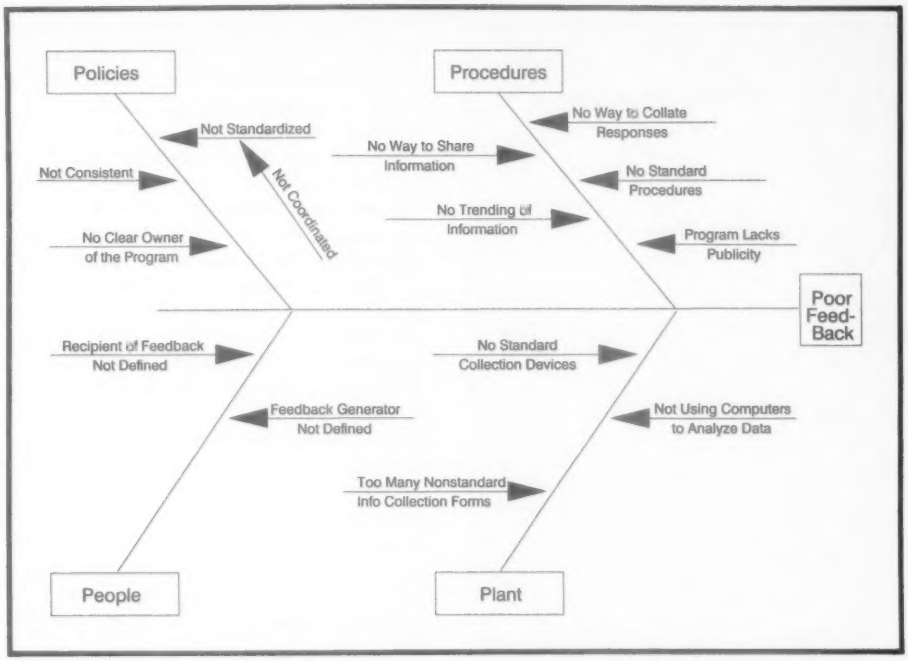


Figure 2. Poor feedback fishbone diagram. Each arrow identifies a contributing source of problems, which when taken together, result in poor feedback of information to decision-makers.

process improvement, and employee awareness and participation (2).

Lew Young, editor in chief of "*Business Week*," stated that "the most important management fundamental that is being ignored today is staying close to the customer to satisfy his needs and anticipate his wants (3)." Practitioners of TQM avoid this mistake by emphasizing knowledge of customer requirements and solicitation of continuous feedback on how well those requirements are being met.

Management commitment is essential for TQM to take root in an organization. Adopting TQM takes a complete cultural change that cannot occur without the support and encouragement of all levels of management. Without unwavering commitment from the management team, the fruits of TQM will die on the vine. Words alone are not a sufficient indication of commitment. The words have to be backed by action. Executive managers must provide the necessary training to familiarize the entire staff with the concept of TQM, and then must ensure that the fiscal, materiel and personnel resources are in place to reap all the benefits of TQM.

Continuous process and product improvement, in addition to being one of the principles, is the ultimate goal of TQM. By continually improving how we do business, there is less reliance on an inspection system. Inspection systems are very expensive, add no value to the end product, and are not very effective at making sure that you deliver a quality product. The end result of most inspection systems is "defensive maneuvering and self-justifying behavior (4)." The time spent defending ourselves and justifying our behavior could be better spent improving our systems so that defending and justifying becomes unnecessary.

Continuous process improvement emphasizes thoroughly understanding and controlling the process used to produce and deliver your product to the customer. This is true whether your product is a manufactured good or a service. By monitoring and charting pulse points in each process, you can continually examine, refine, and improve reproduction and delivery methods. Effective, efficient processes are much better at delivering a quality product than is an expensive, cumbersome inspection system. Figure 1 illustrates the steps involved in continuous process improvement.

Because TQM stresses continuous process improvement, it is vital that those with the most knowledge about the processes buy into the TQM concept. Those that know processes best are those actually doing the job on a day-to-day basis. Employees have to examine their jobs to find more efficient and effective ways to accomplish their tasks. Training operational-level personnel on the concepts of TQM, and then encouraging them to use their

Feedback Loop Process Action Team Recommended Changes to the Patient Relations Program

- A revised Patient Assistance Team Member program
  - New operating instruction
  - Quarterly training program
  - Emphasis on problem resolution at the lowest level
  - Highly visible signs to identify each section's PATM
- New inpatient and outpatient questionnaire program
  - Questionnaires printed on optical character reader forms for computer analysis
  - Readily available questionnaires
    - Installation of questionnaire boxes throughout the facility
    - Enhanced emphasis on distribution of questionnaires by staff members
  - Development of software to automate analysis of questionnaires
  - Monthly trend analysis of questionnaires
    - Reported to executive committee and departments/clinics
- Enhanced patient relations marketing effort
  - Briefings to base organizations (both military and civilian)
  - Regular and frequent articles in the base newspaper
  - Use of the in-house television system for patient relations spots
  - Develop a readily identifiable patient relations logo to tie all aspects of the program together
  - Computerized "Information Desk" with directional guidance, information and announcements available

Figure 3. Modifications approved by the executive committee.

talents on quality circles and process action teams (PATs), helps to foster the cultural change necessary for TQM to take hold in the organization.

TQM and the Patient Relations Program

Applying these principles has become a way of life for much of the staff at Wright-Patterson Medical Center. One program that has benefited greatly from the application of TQM is the patient relations program.

In July 1989, Col. Charles H. Roadman II, the medical center commander, chartered a PAT to examine the methods being used to gather feedback from customers who are primarily patients, and internal customers who include most of the medical center staff. This particular PAT, entitled the Feedback Loop Process Action Team, consisted of representatives from the Nurse, Medical Service, and Biomedical Sciences Corps, plus the patient relations coordinator. Members met for one hour each week.

As a demonstration of the willingness to commit resources to the concept of TQM, several members of the PAT were given 12 hours of instruction on the operations of a PAT and on statistical process control. This instruction provided us with such tools as flow charting, cause-and-effect diagrams, control charts, brainstorming and interviewing techniques, and data collection methods. This training proved to be invaluable as we faced the challenge of improving a program that affects every section in the medical center.

While on the topic of training, it is important to note that applying TQM does require a "statistical way of thinking (2)." This is not the same as saying that you must be a statistician to apply TQM; however, it does require that you understand that variation is a part of every process. To come to grips with this variation, managers must measure key indicators over a period of time and look for patterns of variation. When the pattern indicates a negative trend, action must be taken before the quality of the product or service falls outside established control limits.

To better understand our customers, the PAT developed questionnaires to determine what patients and staff would like to see in a model patient relations program. After gathering this information, we closely examined the current system. Our findings on what customers want in a model program were then compared with the existing program. Several differences between the two were discovered.

The differences between the existing and ideal programs fell into three broad categories. First, the current questionnaire system was not effective. There was no central control over the questionnaires. Many departments had their own questionnaire, and the results of these departmental surveys were not sent to executive management so that this information could be used to make decisions.

Second, the patients and staff were not fully aware of all aspects of the program. Additional marketing was necessary.

And third, the Patient Assistance Team Member (PATM) program needed additional emphasis. PATMs are the patient relations representatives in each section. PATMs are the first level of assistance for patients who wish to express a concern or resolve a problem.

The members of the PAT then met to brainstorm possible causes of the differences between the existing program and the program desired by our customers. The results of this session were developed into a fishbone chart (Figure 2) to provide a clear understanding of the effect of each difference. This chart was then used to guide us in developing proposals to overcome the differences between the current and desired programs.

It was then time to provide input to the executive committee. Lt. Col. Jim Roberts, the PAT leader, briefed the committee on our findings, and on modifications that we felt needed to be implemented to improve the program. The executive committee approved the proposal with only slight changes, which is indicative of management's willingness to delegate authority to the operational level. The modifications approved by the executive committee are outlined in Figure 3.

Applying TQM Facility-wide

We are now hard at work turning the proposed modifications into reality. There is much left to be done before our PAT can be disbanded and our efforts declared complete. Some of the modifications are in the design phase, and others are awaiting supplies, equipment or funding. Even when the modifications are fully implemented and the PAT disbanded, continuous process improvement will continue to take place. However, it will be the patient relations coordinator who will shoulder the responsibility for further improvements. And that is as it should be. Quality circles, PATs and statistical process control are just tools. All members of the organization must continuously seek to improve the way they do business for TQM to work.

At Wright-Patterson Medical Center, the Feedback Loop PAT is just one of the many PATs applying the concepts of TQM to improve the way we provide service to our customers. To date, there have been 12 PATs formed, covering topics ranging from access to care and the admission/discharge process to universal precautions and the implementation of cardiovascular surgery. Some of the PATs have made sweeping changes, while others have made relatively minor adjustments. But most importantly, all of the PATs have made improvements in the way we deliver health care at Wright-Patterson Medical Center.

Be forewarned, a cultural change as vast and as profound as that required to implement a total quality environment is not easy to secure. Machiavelli once said that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things. And that is what TQM is—a new order of things. However, the benefits are more than worth the cost. After all, our customers deserve nothing less than a total quality product.

Capt. James P. Morgan is an administrative resident at Wright-Patterson USAF Medical Center, Wright-Patterson AFB, Ohio. He is an Air Force Institute of Technology student attending the U.S. Army-Baylor University Graduate Program in Health Care Administration, and is attached to the medical center to complete the administrative residency portion of the program. Maj. Donald W. Shields is the associate administrator, Resources, at the medical center.

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The First Central Medical Establishment

George M. Watson Jr., Ph.D.

One of the least recognized World War II units was the First Central Medical Establishment (CME). The CME performed hundreds of tests, brought about innovations in equipment for fliers during the war, and influenced aerospace medical research for many years following the war.

Background

During 34 months of combat between 1942 and 1945, the 8th Air Force, U.S. Army Air Forces, which was the largest air striking force ever used in combat, performed hundreds of operations that often included hundreds of daily sorties. Together with the Royal Air Force, 8th Air Force pursued the progressive destruction and dislocation of the German military, industrial and economic system. In addition, 8th Air Force sought to undermine the morale of the German people to a point where their capability for armed resistance would be fatally weakened (1,2).

Weather conditions played a prominent role on practically every mission. Pilots had to fly over unfamiliar and extremely cold waters of the North Sea in which they were often forced to ditch. The 8th Bomber Command (part of 8th Air Force) often flew at altitudes in excess of five miles. With open waist windows, temperatures often dipped to 30 below zero. Failed oxygen equipment, defective electric flying clothing, and frostbite all took their toll on the fliers. Indeed, during the first year of operations, frostbite alone accounted for more casualties than enemy gunfire (2).

Another factor affecting the combat readiness of a unit was the mental health of the aviators. Nowhere could a flier prepare himself for the intensity of enemy attack, the long flights under dangerous and nerve-wracking conditions, and the constant possibility of a crash landing on land or in the sea. All these experiences added to the mental stresses of the fliers (3).

Recognizing that the physical and mental problems of combat fliers required solution, Gen. (Dr.) Malcolm C. Grow, the 8th Air Force surgeon, and his deputy, Col. (Dr.) Harry G. Armstrong, believed that a new type of medical organization was needed. Both men had been prominent in the field of aviation medicine, and both would become surgeon general of the Air Force after the war.

During the 1930s, General Grow and Colonel Armstrong had been instrumental in founding the Army Air Corps' Aero Medical Laboratory at Wright Field, Ohio, to conduct theoretical and practical research in aviation medicine. Based upon his experiments at Wright Field, Colonel Armstrong wrote *"Principles and Practice of Aviation Medicine"* in 1939, a volume considered the best textbook on the subject for more than two decades (4).

In the summer of 1940, General Grow and Colonel Armstrong went to England during the Battle of Britain. There they worked closely with the British medical staff, including Air Marshall Sir Harold Whittingham, chief medical officer of the Royal Air Force. They learned not only about the medical problems confronting the British, but were also kept abreast of the latest developments in German aviation physiology and medicine (5).

This experience convinced both General Grow and Colonel Armstrong that the American military was unaware of the nature and extent of physiological and medical problems of modern combat aviation, such as anoxia, frostbite, blackout and aeroembolism. The pair suggested that an aviation medical research and teaching unit be established. They felt it should be staffed with carefully selected medical experts in aviation medicine, physiology and psychiatry, and that it should be readied to follow the U.S. air forces in Europe as a field unit (6).

The unit General Grow and Colonel Armstrong established on July 30, 1942, was the 8th Air Force Provisional Medical Field Service School. It was later redesignated as the 8th Air Force Central Medical Establishment on Nov. 9, 1943, and in August 1944, it became the First Central Medical Establishment (3). For the duration of World War II, the First CME was located at High Wycombe, England.

Mission

The First Central Medical Establishment had a threefold mission. The first task was to accomplish physiological and medical research essential to protect aircrews against anoxia, cold and frostbite, airsickness, failure of electric flying suits, aeroembolism, blackout, air sea rescue, and other perils

Members of the 41st Altitude Training Unit, part of the First Central Medical Establishment physiology department, take a break in front of a "mobile low pressure chamber." The chamber allowed the CME to simulate altitudes up to 50,000 feet to test oxygen masks and other equipment.

which endangered 8th Air Force missions. The research and development function was performed by a number of sections within the Department of Physiology; each section concentrated on a different type of equipment.

The second major CME responsibility was to determine the best methods for diagnosis and treatment of combat fatigue and neurosis. A psychiatry department and a central medical board were organized to initiate policy on combat tour lengths based on physical and mental health of the aircrews. When established, the Central Medical Board became a referral agency for difficult cases of combat stress. Along with the Department of Psychiatry, the Central Medical Board made important studies of combat stress. One result was the establishment of several "rest and neurosis centers" in England that were the first in the Army Air Forces (3,6).

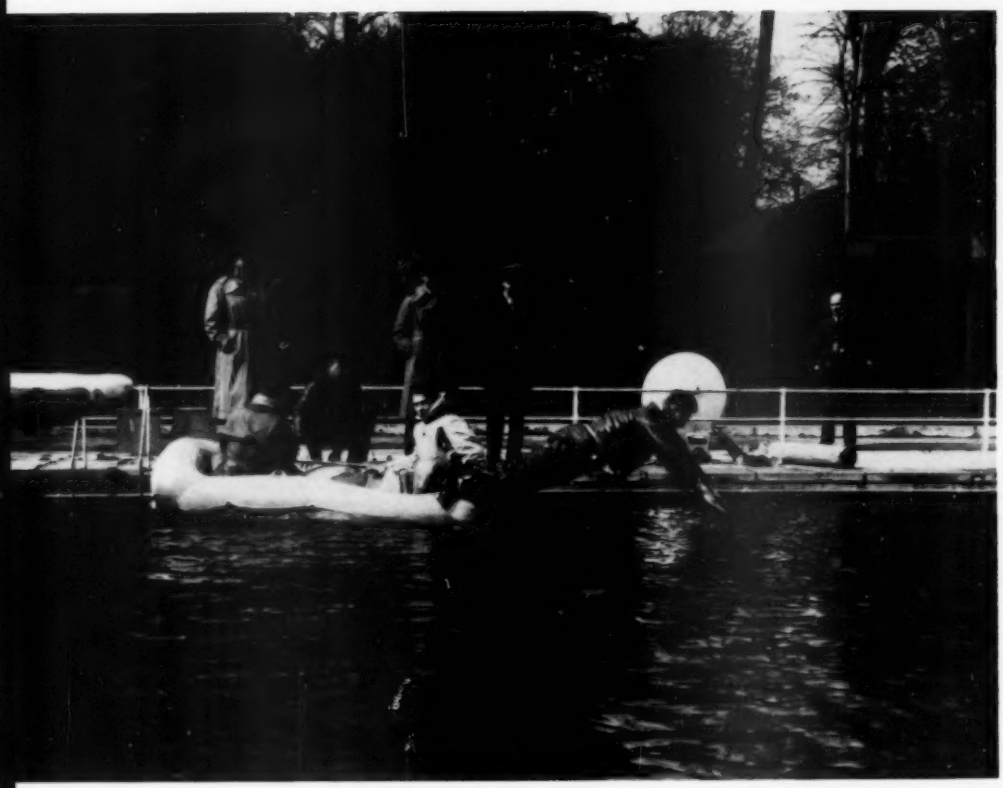
The third element of the CME mission was to initiate training programs for flight surgeons, personal equipment officers and aircrews who had not been adequately trained in the United States. The CME provided instruction on the medical problems of high-altitude flight and acquainted the staff with practical methods of coping with such problems. The training function was handled by the Department of Physiology and included a course for flight surgeons, an altitude training program and a personal equipment officer program.

Testing

Testing American equipment under combat conditions was another important function of the Central Medical Establishment. The CME thus acted as a liaison between equipment users and designers. During the war, CME sent a series of reports on combat service testing to the Aero-Medical Laboratory, the Air Surgeon's Office and to other interested stateside agencies. Their inputs provided guidelines for equipment modification and pointed to areas which needed further research.

Anoxia

A two-year study of anoxia (deficiency of oxygen that causes blackout) of 256 non-fatal and 47 fatal cases, helped to significantly decrease such incidents. After interviewing members of the 97th Bombardment Group before and following an August 1942 mission at the 23,000-25,000 foot ceiling, the CME interviewers found that the fliers had difficulty with their A-8 oxygen masks. A subsequent report urged that no B-17 aircraft equipped with A-8 oxygen masks participate in combat missions exceeding 25,000 feet, and that each crew member be equipped with an extra A-8 oxygen mask. The report further recommended that crews be supplied with RAF flying goggles, to replace the obviously inferior American variety.



The First Central Medical Establishment conducts a dinghy drill.

A later study revealed that the most important causes of fatal anoxia were quick disconnect failure, freezing of the A-14 mask, and personnel failure (for example, failure to comprehend the equipment or when to put it on). In addition, CME studies pointed out the B-17 and B-24 crew positions most likely to experience anoxia, in descending order: ball turret gunners, tail gunners, radio operators, navigators, waist gunners, and top turret gunners. One CME anoxia report recommended that a warning panel be developed for aircraft to indicate whether or not a crew member was using his oxygen (3,7).

Air/Sea Rescue and Ditching

Another area of CME investigation was in air/sea rescue and crash landings. It was found that the 8th Air Force had no standardized air/sea rescue procedure during the early period of its operation. Although the facilities of the RAF Rescue Service were available to American flying personnel, the rescue rate of American fliers who landed in the sea was negligible. Indeed, until May 1943, only part of one ditched 8th Air Force bomber crew had been rescued by U.S. rescue personnel; yet during the same period, nearly one-third of ditched RAF bomber crews were rescued by British rescue personnel despite the fact that the RAF flew at night and AAF during the day.

Another CME study identified failure to contact the Air/Sea Rescue Service, failure to indoctrinate aircrew members with available ditching and survival data, inefficient air/sea rescue equipment, and poor ditching characteristics of some aircraft as causes for the low rescue rate.

The CME contributed to the elimination of ditching casualties, through its training programs, improvement in air/sea rescue equipment, and establishment of standardized ditching procedures for the various types of 8th Air Force operational aircraft. 8th Air Force reproduced the CME "ditching drills and diagrams" and distributed them to all theater bombardment units as standard procedures. The reports were also sent to the United States and to modification engineers for further study (3,7).

Frostbite

In collaboration with the British, the Central Medical Establishment isolated wind blast, defective

electrical equipment, lack of equipment, and personnel failure as the four major causes of a formidable frostbite problem. The wind blast problem was solved by enclosing waist windows with plexiglass in heavy bombardment aircraft. Newer and more reliable electrically heated suits were introduced and, through CME efforts, British production of electrically heated suits helped to ameliorate an immediate shortage. Finally, an aggressive publicity campaign was designed to combat the personnel failures while equipment officers received intensive indoctrination and training.

Psychological Problems

The CME's Department of Psychiatry provided a consultation service for the flight surgeons of 8th Air Force. Each case of stress was examined on the basis of the individual's flying and combat history. The psychiatry department concluded that one method of preventing combat neuroses was to maintain high aircrew morale.

One CME recommendation that became an 8th Air Force practice was the establishment of definite and fixed combat tours. Other studies of combat stress-related psychiatric cases revealed some interesting statistical information and correlations. For example, studies found the combat neurosis rate to be positively related to both the aircraft loss rate and the number of crew incapacitated by wounds. In addition, a common misconception was corrected by CME study—the discovery that there existed little correlation between the incidence of combat neurosis and the number of missions flown (3).

Lt. Gen. James H. Doolittle (left), commander of 8th Air Force, visits the First Central Medical Establishment and its commander, Lt. Col. Blondy S. Henry, in 1944.

Conclusion

The First Central Medical Establishment provided quick and immediate response to practical combat flying problems. Its analysts provided a continuity of applied research for 8th Air Force throughout World War II. Its pioneering work served as a primary conduit for transmitting the most recent aviation medical and physiological information from the U.S. air forces in Europe, the Royal Air Force and the Luftwaffe to the United States. In short, the First Central Medical Establishment helped shape policy for the entire U.S. Army Air Forces Medical Services. Its work would influence the leadership of the new Air Force when it achieved independence in 1949 and for years to come.

(Author's Note: James J. Smith, M.D., Ph.D, Professor of Physiology and Medicine at the Medical College of Wisconsin provided information and documentation about his experience with the First Central Medical Establishment. For his work with the Central Medical Establishment, Dr. Smith was awarded the Legion of Merit in 1944.)

George M. Watson Jr., Ph.D., is the chief historian for the Office of the Surgeon General, Bolling AFB, DC.

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Brigadier General Selections

Col. (Dr.) Jerry D. Gardner is the deputy assistant surgeon general for dental services at the Office of the Surgeon General, Headquarters, U.S. Air Force. He received a doctorate in dental surgery in 1964 from the University of Illinois School of Dentistry, Chicago. Colonel Gardner entered active duty as a dental intern at Carswell AFB, Texas, the same year.

Following assignments at Edwards AFB, Calif.; Cam Ranh Bay, Vietnam; and Patrick AFB, Fla.; he attended Boston University where, in 1972, he was awarded a master of science degree in prosthodontics. Subsequent assignments included Chanute AFB, Ill.; Wilford Hall USAF Medical Center, Lackland AFB, Texas; and the USAF Medical Center Scott, Scott AFB, Ill. He later served as director of dental services of the Wiesbaden, Germany, and Scott medical centers. In 1985, he became the command dental surgeon for Headquarters, Military Airlift Command, and in 1989 he returned to Wilford Hall as the director of dental services. He assumed his present position in June 1990.

Colonel Gardner has served as consultant to the surgeon general in prosthodontics and special consultant to the assistant surgeon general for dental services in fixed prosthodontics. He is a diplomate of the American Board of Prosthodontics; a fellow of the American College of Prosthodontics and the International College of Dentists; and a member of the Federation of Prosthodontics and the American Dental Association.

His military awards and decorations include the Legion of Merit with oak leaf cluster, Bronze Star, Defense Meritorious Service Medal, USAF Meritorious Service Medal with oak leaf cluster, Air Force Commendation Medal and United States Marine Corps Certificate of Commendation.

Col. (Dr.) Charles H. Roadman is the command surgeon, Headquarters, U.S. Air Forces, Europe. In 1968, he was commissioned in the Biomedical Sciences Corps as a clinical laboratory officer student. Upon graduation, he was selected to attend the Emory University School of Medicine, Atlanta, Ga., under Air Force sponsorship. The colonel earned his doctor of medicine degree in 1973, and completed his internship and residency in obstetrics and gynecology in 1977 at the USAF Medical Center Keesler, Keesler AFB, Miss.

Between 1977 and 1980, Colonel Roadman served successively as chief, obstetrics and gynecology; chief, surgical services; and chief, hospital services at the 401st Tactical Fighter Wing Hospital, Torrejon AB, Spain. He subsequently commanded USAF hospitals at RAF Upper Heyford and Nellis AFB, Nev. In 1985, he became a student at the National War College. Following a tour as director of professional services/aerospace medicine, and deputy surgeon, Headquarters, Strategic Air Command, Colonel Roadman became the commander, USAF Medical Center Wright-Patterson, Wright-Patterson AFB, Ohio, in 1988. He assumed his present duties in May 1990.

Colonel Roadman is a diplomate of the American Board of Obstetrics and Gynecology and a fellow of the American College of Obstetricians and Gynecologists. He holds membership in the American Medical Association, Aerospace Medical Association and Association of Military Surgeons of the United States.

His military awards and decorations include the Legion of Merit, USAF Meritorious Service Medal with oak leaf cluster, and Air Force Commendation Medal.

Editor's note: As we went to press, both Cols. Gardner and Roadman had pinned on their stars.

Col. (Dr.) Jerry D. Gardner

Col. (Dr.) Charles H. Roadman

In Memoriam

We regret to announce the death of **Maj. Gen. (Dr.) Dan C. Ogle, USAF, Retired,** on April 30, 1990. General Ogle was the third Surgeon General of the Air Force, from June 1954 to November 1958.

General Ogle was born in 1901 in Keithsburg, Ill. After graduating from high school in 1919, he received a bachelor of science degree from Eureka College, Eureka, Ill., in 1924, and a bachelor of science degree in medicine from the University of Illinois in 1927. In 1929, he graduated from the University of Illinois College of Medicine and was commissioned as a first lieutenant in the U.S. Army Medical Corps. He performed his internship at the University of Illinois and his two-year residency at Army and Navy General Hospital, specializing in general practice and internal medicine. In 1931, General Ogle graduated from the School of Aviation Medicine.

Before beginning his 30-year military career, the general worked as assistant principal and instructor at Keithsburg High School and served as Keithsburg's mayor for one term. His early military career took him to various assignments in the continental United States and Hawaii. At the outbreak of World War II, General Ogle was given the responsibility for developing and commanding the 3,000-bed hospital center at Coral Gables, Fla. Later, he became the surgeon for 15th Air Force in Italy.

Following the war, the general was assigned to Air University as command surgeon and instructor. And in 1949, he graduated from Air War College. He was then sent to Washington, D.C., as a special assistant to help organize a separate medical service for the newly formed Air Force. In late 1949, he became the first deputy surgeon general, United States Air Force, under Surgeon General Malcolm C. Grow. In 1953, General Ogle began a one-year term as command surgeon, Headquarters, U.S. Air Forces, Europe. He was brought back to Washington, D.C., in 1954 to become Air Force surgeon general.

Throughout his military medical career, General Ogle stressed the importance of combat effectiveness. Toward this end, he developed and supported aeromedical research in its broadest aspects. Among his many accomplishments, he supported the clinic concept to provide first-rate health care for the Air Force community and inaugurated a construction goal of 170 facilities, including the 1,000-bed medical center at Lackland AFB, known as Wilford Hall.

After his retirement from the Air Force in 1958, General Ogle returned to Illinois and became president of the Institute of Physical Medicine and Rehabilitation in Peoria. Later he left his civilian career to retire in Tampa, Fla.

General Ogle is survived by his wife, the former Helen Garber, two children and several grandchildren. His remains are interred at Arlington National Cemetery.

BSC Snapshots